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PROCEEDINGS AND RECOMMENDATIONS OF THE SEMINAR ON
"IMPACTS OF DEVELOPMENT PLANNING ON ENVIRONMENT"
HELD AT LUCKNOW ON DECEMBER 9, 1990.

भारतीय लोक प्रशासन संस्थान



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A summary record of discussion of the Indian Institute of Public Administration seminar on "Impacts of Development Planning on Environment" held on December 9, 1990 in collaboration with the Society for Himalayan Environmental Rehabilitation & People's Action (SHERPA) in Yojna Bhawan, Lucknow.

The seminar documents in English and Hindi were circulated to the participants. The English version of the document contained 35 articles on different aspects of environment. The Hindi document included 3 articles. The proceedings spread over three sessions. The inaugural session was presided over by Sri R.K. Bhargava, Chief Secretary, U.P. and President, IIPA U.P. Regional Branch. The second and third sessions were presided over by Prof. P.R. Singh, Director, Environment, U.P.

A list of participants is enclosed as annexure I.

Sri T.N. Dhar, Hony. Secretary, IIPA welcoming the participants emphasised that environmental factors have to be built into the development process. In point of fact including environmental factors into planning means additional costs. This is inevitable. But the taking of environmental measures can generate additional employment and incomes thus making these acceptable as well as viable. Giving a historical perspective he said that the needs of human beings are continuously rising and to meet this demand man interacts with and affects the natural environment in a variety of ways which are both positive and negative. During the last nine decades the world population has multiplied by a factor of five and in the next decade the world population is likely to cross the six billion mark. As a result of population expansion more than 40 per cent of the arable land in the world is being utilized for growing crops and the rest of the area is either too cold or too dry or too mountainous

or too hot for sustaining any form of agriculture. Because of pressure of human and animal populations the forest cover is dwindling. The soil and water regimes have been adversely affected. Consumerism is the new religion. While the world is moving ahead economically disparities have increased. There is social and political turmoil all around. In the process ideologies have become less relevant to-day. Individualism and self-centredness are the order of the day. The challenges of environmental security have become acute and critical. There is a global concern about the survival of man as an epitome of culture, of earth as a regenerating haven, of climates that make life and civilization possible. There is fear, and a genuine one, that without prudence humility and knowledge progress per se may become self-destroying.

Sri Dhar felt that while development as a goal was unexceptionable, it has to be harmonised in all respects with physical and biological resources. In this context, environments have distinct functions - Resources like water, soil, plants and animal life are the natural capital on which each man depends to satisfy his needs. These resources are, however, not inexhaustible. While many of these resources can regenerate themselves, the regeneration is rather slow and complicated. Every exploitation results in some depletion. Therefore, development in order to continue has to be sustainable. It has to be balanced with the Carrying Capacities of earth's diverse organic and inorganic systems.

Sri Dhar explained that wide use of chemicals like DDT and other insecticides and pesticides has created many problems. Time was when the inventor was awarded a Noble Prize. Time came when DDT was banned for use in many countries. Vanishing forests are another critical factor of concern. He felt that different solutions will have to be found for

different situations having distinct geographical, economic and cultural contexts. The people are striving to meet their basic requirements of food, fuel, shelter, employment and social services and this process will continue inspite of the fact that they have major impacts on environment. He gave various examples of development activities to emphasise the point that most development activities have some environmental impacts. He, therefore, suggested that every possible step should be taken to undo the great damage done to the lands and eco-systems in the past. As for on-going development projects and programmes care has to be taken to

ensure their execution does not impose unacceptable environmental costs on the surroundings of the area concerned. This calls for careful preparation of projects and rigorous monitoring of implementation. It is also necessary to ensure that future development is controlled in a manner that an optimal trade-off between conservation and economic growth is achieved. The important need is to build the practice of environmental impact assessment into the project/programme formulation stages so that steps for making such impacts friendly are included in the project costs ab initio. A preventive approach is far better than a curative one.

Sri Dhar thanked the President and other invitees for participating in the Seminar and hoped that interaction will indicate the directions in which development in harmony with environment should be undertaken.

Sri R.K. Bhargava, Chief Secretary, U.P. felt that it was difficult to talk of environment in the present day atmosphere of chaos, rioting and social conflicts. He felt that there is need to ensure that the minds of the people are attuned to the necessity of harmonious relationship between various aspects of life and environments. He strongly felt that it was the advanced countries which started the

process of polluting environments. He emphasised that for a long term impact on the mind of the people environmental awareness should be made an everyday business of life. Education at the primary and secondary levels should incorporate environmental awareness. This should be so even at the the higher levels of education. Distance, informal and continuing education should supplement this effort. Media will have to play an important role. Voluntary groups and voluntary action can very effectively catalyse this process. There should be emphasis on hygiene and sanitation at all levels. The industrial projects should be sanctioned only after due care has been taken to ensure that they do not pollute the environment. He also emphasised that it was not enough to spell out the precautions and remedial measures that would be taken to ensure a healthy environment, while preparing and sanctioning industrial, irrigation, power or other projects. The experience has so far been that while such steps are spelt out in project reports, they are not actually implemented and there are lots of time gaps between the completion of the projects and implementation of the environmental measures that were to be taken up. In this connection, he referred to the Rihand Dam which had been completed long back but the proposed afforestation has not yet been completed. In respect of the Tehri project too the gap was glaring. This implies that environmental measures have to strictly monitored. A climate has to be created for assuring the compliance of the required environmental measures.

Sri R.K. Bhargava expressed his grave concern that the community lands like threshing floors, roads, community forests no longer exist in villages. There have been encroachments, common properties have been converted into individual properties or farmed lands. Sri Bhargava felt

sustainable environment is more a matter of education and discipline in all walks of life. He felt that the attitude of the Government also needs changing in this context. In this connection he suggested, among others, the following measures:

- (1) Safety zones should be demarcated in respect of the activities which have toxic effects. Similarly, around sanctuaries and forests safety zones should be established so that resource bases are protected. For example, say within a ten kilometre belt of forests, alternate fuel should be provided to the community at reasonable prices so that trees can be protected.
- (2) Intensive fodder development programmes should be taken up to ensure adequate supply of fodder to domesticated animals for stall feeding.
- (3) Fuel requirements of the people should be ensured alternately at affordable prices if pressure on forests is to be eased.
- (4) Smokeless chulhas, solar cookers, biogas plants and other non-conventional energy devices should be popularised among the people.
- (5) It may not be possible to have effluent discharge systems separately for each industrial project, specially tanneries which are located in clusters. Methods should, therefore, be evolved which would generate integrated systems of effluent discharge covering all the units in clusters with costs being shared by them on an equitable basis. This would apply mutatis mutandis to industrial estates as well.
- (6) While afforestation on community lands is desirable, it is not always possible to have such lands in the vicinity of villages and, therefore, an effort has to be made to plant trees on private lands as vigorous supplemental measure.

- (7) It is not possible for government alone to undertake the colossal task of environmental rehabilitation and conservation. It is, therefore, necessary to involve people and specially the industrial houses and local communities, local institutions and voluntary groups in this task. Schools, colleges and universities can play a very important role in this regard.
- (8) There is urgent need for special efforts for rehabilitating and conserving environments in the hill areas, because the adverse environments in hills have wider implications for the whole of the country.
- (9) In hill areas emphasis should not be on large and medium industries but on items like tourism development, cottage level production, handicrafts and pollution free production like that of electronics, optics, etc.
- (10) Whenever local people are affected because of the siting of a project in their area, they should be given alternatives from which they should choose the one best suited to their needs and genius.
- (11) Environmental consciousness needs to be built widely into their educational systems at all levels.
- (12) Industries must be persuaded to bear the external cost of environmental pollution that they cause.
- (13) Environmental security is essential as well as desirable, so is development. Environmental control measures need to be made cost-effective. Consistent and continuous research efforts are called for in these contexts.

Prof. P.R. Singh, Director, Environment, Government of U.P., chaired the second and third session of the seminar. Initiating discussions in the general session, he emphasised the following points:

- (1) Environmental consciousness should be generated in a systematic manner at all levels of education through curriculum and action programmes.
- (2) Different problems connected with environment should be identified and preventive steps should be taken so that the anticipated damage is avoided or minimized.
- (3) There should be distinct emphasis on conservation of energy.

Dr. Ambekar, Director of Agriculture raised the following points:

- (1) A right step is being taken in launching a massive afforestation drive throughout the country. There is ample scope for afforestation on roadsides, by the side of railway tracks and canal banks, etc. However, only such species should be planted which are of nutritional value to the local people and also improve environment. Plants like neem, imli, mango, jamun, mahua, sheesham, bargad, etc. should be preferred to plants like eucalyptus which are ruining the environment. Trees should yield fodder, fruits, timber and fuel to meet community needs.
- (2) Scientific land use is extremely necessary for environmental rehabilitation and conservation. Sri Ambekar felt that the planners should promote the development of integrated farming systems, which should include agroforestry, agriculture, horticulture, livestock, fisheries, etc. There should be a package of these components in the farming systems and different groups and different areas should have different packages to suit their needs. Some universities have already taken up research work in this context. The research should be area specific and community need based.

- (3) The use of chemical fertilisers is still quite low in U.P. It has to increase to ensure adequate food production. However, the use of chemical fertilisers alone will damage soils. Such use should be supplemented by use of organic manures and legume crops. Soil health demands a balanced use of both types of fertilizers, organic and inorganic.
- (4) Use of chemical insecticides and pesticides cannot go on without damaging environments. To the maximum extent possible a wide based use of biological control of pests and insects should be taken up in hand for plant protection purposes.
- (5) There are vast usar and other wasteland tracts which have to be reclaimed but such reclamation has to be attempted on the basis of an integrated project approach providing for irrigation, soil improvement, mechanical measures, cultural practices, appropriate cultivars etc. The cost of usar reclamation per hectare is now Rs. 18,000/- to Rs. 20,000/- which appears to be excessive but if the land is properly managed it will be a productive proposition from the long term cost-benefit point of view.

Prof. P.R. Singh, intervening in the discussions, emphasised the following points:-

- (1) Attitudes and habits of the people play an important role in the environmental status of an area. More and more use of mechanical and electrical machines and gadgets does create environmental problems and people have to be educated about rational utilisation of these facilities. For example, bicycle could be a man environment friendly substitute to scooters and motor-cycles for limited distances. Bus travel could be less costly, and less polluting than small car travel.

- (2) Choices of technology are very important for making the process of development environmental friendly.
- (3) More educational material is required for generating environmental consciousness amongst the young. For example, books written in simple language can be produced on mass scale for the education of the young. Environmental education should be included in the syllabi at different levels. In this context the whole educational system needs to be re-oriented.
- (4) Eco-restoration Nirman Clubs need to be organised, expanded and strengthened in different institutions and more and more individuals and institutions should be involved in eco-restoration work. A beginning has already been made in this direction in U.P.
- (5) The environmental component of each project or scheme should be integrated in the development programme or project itself. In this connection, Dr. Singh referred to the serious problems faced in the disposal of flyash coming out of thermal power stations causing lot of environmental problems. Fly-ash, inspite of efforts spread over decades, is still being dumped and only a small fraction of it is being utilised. It should be possible to utilise fly-ash for manufacturing building bricks, road construction material, pozallana cement etc. The problem is that of transport costs. In the context of soil conservation and environmental protection, it should be possible to subsidise the use of fly-ash for construction purposes. Similarly, industrial wastes should be converted into materials which may be utilised for productive purposes.
- (6) The trees should be lopped in the fields in a manner that the regeneration is not adversely affected. The lands which are unfit for crop cultivation should be put under non-crop plantation. This will stop damage

to such land and will also provide vegetational cover to the area.

- (7) There should be consistent efforts to save energy, specially exhaustable resources like petroleum products by use of alternative energy resources.
- (8) Population control must be the most important component of any effective environmental policy in a country like India.

Prof. Singh emphasised the necessity of preparing periodical Environmental Status Reports in respect of various districts, watersheds etc. He noted that Environmental Status Report of one hill district of Chamoli has already been completed and he was hopeful that environmental status reports will be prepared in respect of other districts in the State. He also emphasised that house building and cooking techniques need to be modified to improve domestic environments. Each development department should have an Environmental Impact Assessment Cell. Some of the present functionaries dealing with planning and project formulation should be trained for this purpose and it may not be necessary to have separate staff for the purpose. Another area where top most priority is required to be given is that of pollution control measures and a strict monitoring of their implementation.

Dr. P.N. Sharma emphasised that there were various stages of planning at which environmental impacts had to be assessed i.e. (1) formulation; (2) appraisal; (3) implementation and (4) evaluation. He felt that environmental factors have to be built in into the process of planning at all these stages. He agreed that environmental cells can be created by selecting suitable persons from amongst the existing functionaries in the planning wings of each department and such selective functionaries could be trained for the purpose. These cells should help in making ex-ante environmental appraisals of projects.

In respect of large and complicated projects help of experts and consultants can be enlisted. Such cells should also be created in the State Planning Institute (Project Formulation and appraisal Division) and Standing Committees of the Government like Public Investment Board and Finance Expenditure Committee. He also felt that Public Investment Board should have a small Environmental Impact Assessment Cell. He also emphasised the need to develop environmental monitoring systems.

Dr. Sharma emphasised that different areas should be categorised as environment sensitive and non-environment sensitive for priority treatment as well as for indicating location of various projects/industries. He also felt that officials and non-officials including college/school teachers should be trained in different aspects of environment. He emphasised that the environmental assessment and clearance processes have to be decentralised so that development works are not delayed.

Dr. Yashpal Singh of the State Pollution Control Board felt that the response of industries to pollution control measures was not very encouraging in U.P. Attempts are often made by industries to circumvent the requirements of pollution control. This is partly because the entrepreneurs are not well acquainted with the technologies of pollution control in a cost-effective manner. Dr. Singh emphasised the need to provide demonstration of cost-effective technologies to small, medium and other industries to make them aware of environmental factors and encourage them to take up pollution control measures. He felt that apart from regulating laws, demonstration, education and severe penalties for infractions, there is need for providing assistance and incentives for the installation of pollution abating equipment when the burden becomes difficult to bear for the manufacturers. He also agreed with other speakers about the need of adding environmental factors in the educational curriculum. Dr Singh explained the facilities that are available for effluent control measures in public

sector projects, where the World Bank gives a loan of 50 per cent of the cost while remaining 50 per cent is equally shared by the State Government and Central Government. The necessity of taking up necessary environment control measures in respect of small urban areas was also emphasised. A basic point made by Dr. Yashpal Singh related to the recycling of the effluent and industrial wastes for re-use. He explained that when a decision is taken to either set up a new industrial area or declare an area as an industrial area, clearance should be sought from the Pollution Control Board regarding drainage capacity, population capacity, geographical factors and other related problems in advance so that environmental problems are taken care of in time. Dr. Singh also emphasised the necessity to tackle domestic pollution which is posing a great threat. In this connection he suggested change in cooking habits, sanitary habits and use of better stoves. He also emphasised the necessity of imparting environmental education at all levels formally and informally. Several participants requested Dr. Yashpal Singh that the procedures of clearance followed by the U.P. Pollution Control Board are cumbersome, time taking and often frustrating. Something needs to be done to streamline them. There is need to simplify the form which is required to be filled up by an entrepreneur, who wishes to establish an industry.

Sri O.N. Saxena, Chief Engineer, Thermal Designs, U.P. State Electricity Board while agreeing that pollution control was imperative pointed out that such control is often a very costly proposition. In this connection, he pointed out different yardsticks having been fixed for pollution safety limits of the Thermal Power Stations; the units that were established before 1979 were allowed to have a higher limits of the Thermal Power Stations; the units that were established before 1979 were allowed to have a higher limit of 350 mg. of particulate matter per metre cube while those established

after 1979 are expected to conform to 150 mg. only. Again for smaller units higher particulate limits are allowed but for bigger units the limit is much lower. The problem arises when a number of small units are placed at the same location in a cluster form. There is controversy whether the total installed capacity of all units taken together should be taken as one unit or different units should individually be taken for purposes of calculating particulate limits. He also emphasised the need of treating the fly-ash problem as a problem with which only the power sector should not be concerned. He admitted that pollution is not monitored at the chimney level but is generally handled at the boiler level. There is need to monitor pollution at the chimney level. In multi-power hydro-electric projects advance EIA is most essential because the impact implications are of a high order.

Sri A.C. Chaturvedi felt that too restrictive an approach to environmental clearances is counter-productive as it creates a lot of difficulties and uncertainty whether a project would come up or not. He suggested that specific indicators for different industries/projects/programmes should be clearly listed so that the planners in different sectors would themselves assess the feasibility or otherwise of a proposed project or programme. Sri Chaturvedi also advocated the American system of public hearings on large projects so that the people at large could also participate in the debate, air their view points and be fully informed about the impacts of a project and steps suggested to ensure that the environmental security is assessed. He emphasised that the sewage water should be adequately treated so that viral contamination of water does not take place.

Sri S.R. Mehta was of the view that the Pollution Control Boards should rigorously and effectively enforce the laws already on the statute books. He also suggested identification of silence zones in large cities to minimise

which a categorization of red (forbidden) orange (allowed with environmental protection equipment installation) and green (freely allowed) for industries had been prepared.

Dr. M.S. Pandey expressed the view that media can be very effective means of environmental education through talks, broadcasts and serials. As a long term measure, he advocated, the introduction of the subject of environment in the school/college/university curriculum. He also suggested each department should have some financial allocation for environmental education of its personnel.

Sri R.S. Tewari felt that locating industries in urban areas has generated lot of pollution but they have also generated incomes and employment. He recommended zoning of areas with regard to categories of industries that should be allowed or not allowed in particular areas looking to the pollution potential of the industries concerned. He felt that shifting of industries from high pollution areas to suburbs or low population density areas was a desirable alternative but is a costly and capital intensive alternative and, therefore, should be properly examined.

Sri V.D. Rayal felt that even when pollution control mechanisms are installed by industries their maintenance is not ensured. He suggested that wherever pollution controlling equipment is installed, it must be regularly maintained and monitored to ensure that its use is being effectively made throughout the production process. He also pleaded for increasing the level of awareness of environmental problems among the people.

Sri B.K. Verma indicated that environmental parameters of different sectors and sub-sectors had not been identified and developed effectively. It has, therefore, not been possible to integrate environmental requirements with perspective planning exercises.

Sri S.P. Gupta emphasised that environment in a wider / social environment, economic environment, political environment perspective includes physical environment, etc. Problems of physical environment cannot be successfully tackled in isolation and require improvement in the overall environment. He felt that poverty is the greatest pollutant and it would not be practical to accept an extremely poor man to give up small concessions that he is entitled to or his traditional access to resources unless he is provided with alternative facilities within his economic reach. The interest of the poor should be duly considered while evolving a policy of environmental preservation or solving problems of pollution. It is extremely necessary that elitism is shunned in environmental planning. He has stressed the fact that in major projects of irrigation, power, industry, mining etc. the environmental protection input in the form of trained personnel should be provided at the planning stage itself so that the project, when ready for sanction, is not delayed because of controversies like those haunting Narmada and Tehri Projects.

The President, Prof. P.R. Singh thanked the participants for their keen interest in the deliberation of the seminar and requested Sri T.N. Dhar to sum up the main recommendations of the Seminar.

Sri Dhar summarized the following main recommendations generally agreed to by the participants :

- (1) Environmental protection measures conceptually and in action terms should be built into the entire process of planning at various levels i.e. plan formulation, ex-ante appraisal, implementation, monitoring and evaluation.
- (2) Each community has to generate its own model of environmental conservation in the context of its natural resources and social and economic requirements. This demands community education and community participation.

- (3) There is need for environmental education at all levels which should start from the primary education itself and should continue upto the University education levels. Necessary infra-structure, syllabi and trained personnel will have to be carefully selected and trained. Environmental education should also be incorporated into distant, continuing and informal systems of education.
- (4) In the context of constraint of resources, it would be necessary to adopt a selective approach to environmental problems. It is not possible to take all environmental protection work at one go and on a watershed basis. Therefore, prioritization of areas for treatment according to their sensitive nature is necessary to prepare district-wise environmental status reports.
- (5) In each development department of the government and large sized public undertakings within the project planning and project formulation set up there must be a compact cell of people trained in environmental aspects of project/programme preparation, in EIA techniques and in internal monitoring of the implementation and operation of projects.
- (6) Efforts should be made to identify precisely the role that the individual groups, communities and institutions can play in arousing environmental consciousness in a constructive complementarity into the needs of development.
- (7) Media like television, radio, theatre, newspapers have a very important role to play and they should be utilized in a planned and effective manner for environment friendly development planning. These efforts would need supplementation by books, pamphlets, magazines, posters, hoardings, stickers and publicity through media, skits, plays, songs etc.

- (8) The whole movement of environmental protection and preservation should guard against obsessively restrictive and negative mechanisms for clearances. For example, if certain no-objection certificates are necessary they should not entail undue delays leading to undesirable practices, cost escalations and entrepreneur resistance.
- (9) In tackling the problems of environment and technology it is extremely important that adequate research and development should go into involving alternative technologies in a given situation to minimise or avoid adverse impacts. Research should be problem as well as area specific.
- (10) The Directorate of Environment in each state should be suitably strengthened in terms of expertise, organisation and funding to play an important role in promoting an environment-compatible path of economic development in the State.
- (11) Environmental laws must be updated and collated and information about such law/rules widely disseminated. Infractions of laws/rules must be firmly and severely dealt with. Where laws/rules involve a radical change in some existing practice or usage or technology, time for adjustment to new parameters must be allowed so that the shift over is smoothly managed.
- (12) A massive effort at training and motivating government personnel, public sector staff, private sector employees, planners, administrators, entrepreneurs, industrialists, community leaders and public representatives in environmental issues is called for so that development strategies and development implementation, can become environment friendly. The State Academy of Administration, IMDUP, State Institute of Rural Development, Extension Training Centres, Universities research institutions and voluntary organisations can play a very important role in this regards.

- (13) The State Pollution Control Board has to be strengthened to ensure that, on the one hand, it acts as a guide and friend of the entrepreneurs and on the other it effectively and rigorously ensures the observance of statutory laws and rules which are devised for environmental safety. The organisation of the Board needs also to be decentralized to facilitate local level, EIA and clearance in respect of projects which are not very large-sized.
- (14) The State Environmental Board was well-conceived to guide environmental policies in the State. Unfortunately it never got going. In many years of its existence it met only once. The Board needs to be promptly revived and made an effective dynamic state level instrument for environment oriented planned development in the State.
- (15) The Planning Department and the State Planning Institute (Project Formulation and Appraisal Division) should be specially strengthened in the matter of Environmental Impact Assessment capabilities.
- (16) There is need for preparing an Environmental Atlas for the State which would need to be updated from time to time. It would be a very effective tool in the hands of planners for area development.
- (17) Voluntary Organisations (NGOs) can play a very vital role in developing environmental awareness in communities as well as governmental/organisational collectivities. They need to be encouraged in all respects.

LIST OF PARTICIPANTS

1. Sri R.K. Bhargava, IAS, Chief Secretary & President IIPA, U.P. Regional Branch, Lucknow.
2. Sri T.N. Dhar, IAS (R) President Shjerna & Hon. secretary, IIPA U.P. Regional Branch, Lucknow.
3. Prof. P.R. Singh, Director, Environment, U.P.
4. Sri Yashpal Dhingra, IPS (Retd.)
5. Dr. S.K. Srivastava, General Manager, PICUP
6. Sri O.N. Saxena, Chief Engineer, UPSEB
7. Sri S.C. Bhatnagar, S.E. (Planning), UPSEB
8. Sri S.R. Mehta, Deputy Housing Commissioner-cum-Secretary, Housing Board (Retd.)
9. Sri V.D. Rayal, Senior Evaluation Officer, Evaluation Div. State Planning Institute, U.P.
10. Dr. Chandresh Shastri, Resource Economist, UPDESCO
11. Sri R.S. Tewari Research Fellow, Giri Institute, Lucknow.
12. Sri V.P. Sharma
13. Lt. Col. R.K. Manocha
14. Dr. Padma Iyer
15. Sri S.P. Srivastava, Jt. Secretary, Finance (R)
16. Dr. Yashpal Singh, Pollution Control Board, U.P. Lucknow
17. Sri F.B. Lal, Director, Economics & Statistics, U.P. Lucknow
18. Dr. P.N. Sharma, Director, Project Formulation & Appraisal Division, State Planning Institute, U.P.
19. Sri V.K. Varma, Perspective Planning Division, State Planning Institute, U.P. Lucknow.
20. Sri S.P. Singh, Management Officer, Yojna Bhawan, Lucknow.
21. Sri T.S. Negi, Management Officer, Yojna Bhawan, Lucknow.
22. Sri T.N. Sinha Jt. Director, U.P. Lucknow.
23. Dr. Ram Bhuj, Deputy Director, Environment, U.P. Lucknow.
24. Sri A.C. Chaturvedi
25. Dr. V.W. Ambekar, Director of Agriculture, U.P.
26. Prof. C.P. Barthwal, Professor & Head of Department of Public Administration, Lucknow University.